

MEMORANDUM OF UNDERSTANDING
BETWEEN THE U.S. BUREAU OF RECLAMATION
AND
THE U.S. FISH AND WILDLIFE SERVICE
PROVIDING FOR
PROJECT AND ACQUIRED WATER SUPPLIES
TO
THE SACRAMENTO, DELEVAN, COLUSA, AND SUTTER
NATIONAL WILDLIFE REFUGES
CALIFORNIA

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THIS MEMORANDUM OF UNDERSTANDING (MOU), made this 19 day of January, 2001, by and between THE UNITED STATES BUREAU OF RECLAMATION (Reclamation), and THE U.S. FISH AND WILDLIFE SERVICE (Service), hereinafter called the “parties,” defines the parties’ roles and responsibilities to meet the requirements of Section 3406(d) of the Central Valley Project Improvement Act of October 30, 1992, Title XXXIV of Pub. L. No. 102-575 (CVPIA) which states, in pertinent part,”... the Secretary shall provide, either directly or through contractual agreements with other appropriate parties, firm water supplies of suitable quality to maintain and improve wetland habitat areas on units of the National Wildlife Refuge System in the Central Valley of California; ...”

EXPLANATORY RECITALS

WHEREAS, the United States has constructed and is operating the Central Valley Project, California (Project), for diversion, storage, carriage, and distribution of the waters of the Sacramento River, the American River, the Trinity River, and the San Joaquin River and their tributaries for the following beneficial uses, including, but not limited to, flood control, irrigation, municipal,

domestic, industrial water service, the protection, restoration and enhancement of fish, and wildlife, and associated habitats in the Central Valley, the generation and distribution of electric energy, salinity control, and navigation; and

WHEREAS, the wetlands of the Central Valley have declined to approximately 300,000 acres and these remaining wetlands provide critical wildlife habitat and other environmental benefits, and important recreational and educational opportunities; and

WHEREAS, the Bureau of Reclamation's 1989 Refuge Water Supply Report concluded that "... it is clear that each refuge requires a dependable supply of good quality water to facilitate proper wetland habitat management for the migratory birds of the Pacific Flyway and resident wildlife and flora."; and

WHEREAS, Section 3406(d) of the CVPIA requires the Secretary to provide firm water supplies of suitable quality, through long-term contractual agreements with appropriate parties, to maintain and improve certain wetland habitat areas in the Central Valley in furtherance of the objectives of the Central Valley Habitat Joint Venture and the Central Valley Project to protect, restore and enhance fish and wildlife and associated habitats; and

WHEREAS, the directives of Section 3406(d) of the CVPIA have been carried out through a cooperative and collaborative effort between the Bureau of Reclamation and Fish and Wildlife Service, acting for the Secretary of the Interior, the California Department of Fish and Game, the Grassland Water District, and the Central Valley Habitat Joint Venture partners; and this cooperative and collaborative effort is expected to continue; and

WHEREAS, Reclamation intends to use Project facilities, in part, to provide firm water supplies of suitable quality to maintain and improve the Refuges; and

5 0 WHEREAS, the Service has demonstrated to the satisfaction of Reclamation that the
5 1 Service has fully utilized the water supplies available to it for reasonable and beneficial use for fish and
5 2 wildlife preservation and enhancement (wetland management) and/or Reclamation has concluded
5 3 through the Bureau of Reclamation's 1989 Refuge Water Supply Report and the San Joaquin Basin
5 4 Action Plan/Kesterson Mitigation Action Plan Report that the Service has projected future demand for
5 5 water use such that the Service has the capability and expects to fully utilize for reasonable and
5 6 beneficial use the quantity of water to be made available to it pursuant to this MOU; and

5 7 WHEREAS, Reclamation and the Service are willing to execute this MOU pursuant
5 8 to subsection 3406(d) of the CVPIA on the terms and conditions set forth below;

5 9 NOW, THEREFORE, in consideration of the mutual and dependent covenants herein
6 0 contained, it is hereby mutually agreed by the parties hereto as follows:

6 1 DEFINITIONS

6 2 1. When used herein unless otherwise distinctly expressed, or manifestly incompatible
6 3 with the intent of the parties or expressed in this MOU, the term:

6 4 (a) "Calendar Year" shall mean the period January 1 through December 31, both
6 5 dates inclusive;

6 6 (b) "Service's Boundary" shall mean the Refuge(s) to which the Service is
6 7 permitted to provide Delivered Water under this MOU as identified in Exhibit "A". Exhibit "A" may be
6 8 revised without amending this MOU upon mutual agreement of the Service and Reclamation;

6 9 (c) Omitted

7 0 (d) "Critically Dry Year" shall mean any Year in which either of the following
7 1 eventualities exists:

7 2 (1) The forecasted full natural inflow to Shasta Lake for the current water
7 3 year (October 1 of the preceding Calendar Year through September 30 of the current Calendar Year),
7 4 as such forecast is made by Reclamation, on or before February 20, and reviewed as frequently
7 5 thereafter as conditions and information warrant, is equal to or less than 3,200,000 acre feet: or

7 6 (2) The total accumulated actual deficiencies below 4,000,000 acre-feet in
7 7 the immediately prior water year or series of successive prior water years, each of which had inflows of
7 8 less than 4,000,000 acre-feet, together with the forecasted deficiency for the current water year exceed
7 9 800,000 acre-feet;

8 0 For the purpose of determining a Critically Dry Year, the computed inflow to
8 1 Shasta Lake under present upstream development above Shasta Lake shall be used as the full natural
8 2 inflow to Shasta Lake. In the event that major construction completed above Shasta Lake materially
8 3 alters the present regimen of the stream systems contributing to Shasta Lake, the computed inflow to
8 4 Shasta Lake used to define a Critically Dry Year will be adjusted to eliminate the effect of such material
8 5 alterations.

8 6 After consultation with the State, the National Weather Service, and other
8 7 recognized forecasting agencies, Reclamation shall select the forecast to be used and will make the
8 8 details of it available to the Service. The same forecast used by Reclamation for operation of the
8 9 Project shall be used to make forecasts hereunder.

9 0 (e) "CVPIA" shall mean the Central Valley Project Improvement
9 1 Act, Title XXXIV of the Act of October 30, 1992 (106 Stat. 4706);

9 2 (f) "Delivered Water" shall mean the Level 2 Water Supplies and the Incremental
9 3 Level 4 Water Supplies diverted by the Service pursuant to this MOU at the Point(s) of Delivery in

9 4 accordance with Article 4(c) of this MOU;

9 5 (g) “Hydrologic Circumstances” shall mean the conditions described in subdivision
9 6 (d) of this Article;

9 7 (h) “Incremental Level 4 Water Supplies” shall mean the difference between the
9 8 Level 2 Water Supplies and the Level 4 Water Supplies depicted in Exhibit “B”;

9 9 (i) “Level 2 Water Supplies” shall mean the quantities of water referred to in
1 0 0 section 3406 (d)(1) of the CVPIA and depicted in Exhibit “B” of this MOU;

1 0 1 (j) “Level 4 Water Supplies” shall mean the quantities of water referred to in
1 0 2 section 3406 (d)(2) of the CVPIA and depicted in Exhibit “B” of this MOU;

1 0 3 (k) “Non-Project Facilities” shall mean any non-Project water conveyance or
1 0 4 storage facilities;

1 0 5 (l) “Non-Project Water” shall mean water or water rights, other than “Project
1 0 6 Water”, acquired, appropriated by, transferred to or assigned to the Service or, transferred to the
1 0 7 United States for delivery to one or more of the Service’s Refuges, as identified in Exhibit “B”;

1 0 8 (m) “Point(s) of Delivery” shall mean the location(s) established and revised
1 0 9 pursuant to Article 5(a) of this MOU , at which Level 2 Water Supplies of Project Water and
1 1 0 Incremental Level 4 Water Supplies are deemed to be delivered to the Service and at which the
1 1 1 Service shall assume the responsibility for the further control, carriage, handling, use, disposal or
1 1 2 distribution of such water supplies so long as such water supplies are being used in accordance with the
1 1 3 terms and conditions of this MOU;

1 1 4 (n) “Project” shall mean the Central Valley Project owned by the United States
1 1 5 and managed by the Department of the Interior, Bureau of Reclamation;

1 1 6 (o) "Project Water" shall mean all water that is developed, diverted, stored, or
1 1 7 delivered by the Secretary in accordance with the statutes authorizing the Central Valley Project and in
1 1 8 accordance with the terms and conditions of applicable water rights acquired pursuant to California
1 1 9 law;

1 2 0 (p) "Refuge(s)" shall mean the lands in the units of the National Wildlife Refuge
1 2 1 System in the Central Valley of California; Gray Lodge, Los Banos, Volta, North Grasslands and
1 2 2 Mendota state wildlife management areas; and the Grassland Resource Conservation District all
1 2 3 identified in the Refuge Water Supply Report and the land(s) identified in the San Joaquin Basin Action
1 2 4 Plan/Kesterson Mitigation Action Plan Report prepared by the Bureau of Reclamation as set forth in
1 2 5 Section 3406(d) of the CVPIA and/or as revised in accordance with subdivision (b) of this Article;

1 2 6 (q) "Refuge Water Supply Report" shall mean the report issued by the Mid-Pacific
1 2 7 Region of the Bureau of Reclamation of the United States Department of the Interior entitled "Report
1 2 8 on Refuge Water Supply Investigations, Central Valley Hydrologic Basin, California" (March 1989);

1 2 9 (r) "Secretary" shall mean the Secretary of the Interior, a duly appointed
1 3 0 successor, or an authorized representative acting pursuant to any authority of the Secretary through any
1 3 1 agency of the Department of the Interior;

1 3 2 (s) "Year" shall mean the period from and including March 1 of
1 3 3 each Calendar Year through the last day of February of the following Calendar Year;

1 3 4 TERM OF MOU

1 3 5 2. (a) This MOU shall be effective on March 1, 2001 and shall remain in effect
1 3 6 through February 28, 2026.

1 3 7 (b) Upon request by the Service, this MOU shall be renewed for successive periods of
1 3 8 twenty-five (25) years each, subject to the terms and conditions mutually agreeable to the parties. The
1 3 9 Service shall request renewal of the MOU at least two (2) years prior to the date on which this MOU
1 4 0 expires.

1 4 1 WATER TO BE MADE AVAILABLE AND DELIVERED TO THE SERVICE

1 4 2 3. (a) During each Year, consistent with State water rights, permits and licenses,
1 4 3 federal law, and subject to the provisions set forth in Articles 8 and 9 of this MOU, Reclamation shall
1 4 4 make available at the established Point(s) of Delivery, and/or convey to the Service the maximum
1 4 5 quantities of Project Water and Non-Project Water, respectively, required to provide each of the
1 4 6 Refuges with the Level 2 Water Supplies set forth in Exhibit “B” and the Incremental Level 4 Water
1 4 7 Supplies set forth in Exhibit “B”. The quantities of Level 2 Water Supplies and Incremental Level 4
1 4 8 Water Supplies made available and/or conveyed to the Service shall be scheduled in accordance with
1 4 9 the provisions of Article 4 of this MOU; Provided, that, Section 3406(d)(2) of the CVPIA provides
1 5 0 that the Incremental Level 4 Water Supplies shall be acquired in cooperation with the State of
1 5 1 California and in consultation with the Central Valley Habitat Joint Venture and other interests in
1 5 2 cumulating increments of not less than ten percent per annum, from the date the CVPIA was enacted,
1 5 3 through voluntary measures which include, but are not limited to, water conservation, conjunctive use,
1 5 4 purchase, lease, donations, or similar activities, or a combination of such activities which do not require
1 5 5 involuntary reallocation of Project yield, water being provided as all or part of the Incremental Level 4
1 5 6 Water Supplies for each of the Refuges can be made available only to the extent that Reclamation is
1 5 7 able to acquire the Incremental Level 4 Water Supplies from willing sources; Accordingly, Reclamation
1 5 8 shall use its best efforts to acquire the Incremental Level 4 Water Supplies and shall coordinate

1 5 9 acquisitions of Level 4 Water Supplies with acquisitions of Environmental Water Account (EWA)
1 6 0 water pursuant to the Operating Principles Agreement, dated August 28, 2000, attached to the Record
1 6 1 of Decision for the CALFED Bay-Delta Program, dated August 28, 2000, and/or other acquisitions of
1 6 2 water for environmental purposes to ensure that acquisitions of Incremental Level 4 Water Supplies
1 6 3 have a priority at least equal to acquisitions of EWA and/or other environmental water each year.
1 6 4 Reclamation also agrees that the Interagency Refuge Management Team, created pursuant to Article 6
1 6 5 of this Contract, shall be included among the interests consulted in acquiring Incremental Level 4 Water
1 6 6 Supplies.

1 6 7 (b) The Service shall continue use of the Non-Project Water component of the
1 6 8 Level 2 Water Supplies set forth in Exhibit “B” as long as such Non-Project Water remains available to
1 6 9 the Service and is of suitable quality. In the event that such water supply is unavailable to the Service,
1 7 0 or is not of suitable quality, subject to the provisions set forth in Articles 8 and 9 of this MOU,
1 7 1 Reclamation shall deliver to the Service sufficient substitute Project Water to ensure that the quantities
1 7 2 of Level 2 Water Supplies are available to the Service in accordance with subdivision (a) of this Article.

1 7 3 (c) The Service shall comply with all requirements of any biological opinion(s)
1 7 4 addressing the execution of this MOU developed pursuant to Section 7 of the Endangered Species Act
1 7 5 of 1973, as amended, which are applicable to each of the Refuge(s) and comply with environmental
1 7 6 requirements applicable to each of the Refuge(s) as may be required for specific activities.

1 7 7 (d) The Service shall make reasonable and beneficial use of all Delivered Water
1 7 8 furnished pursuant to this MOU consistent with the wetland habitat water management plan(s)
1 7 9 described in Article 14 of this MOU.

1 8 0 (e) In order to maximize water available to Refuges and better manage such water,

1 8 1 the Service may request Reclamation's permission to reschedule a portion of the Level 2 Water
1 8 2 Supplies and/or a portion of the Incremental Level 4 Water Supplies made available to the Service for
1 8 3 use within the Service's Boundary during the current Year for use within the subsequent Year.
1 8 4 Reclamation may permit such rescheduling in accordance with applicable law, and the then-current
1 8 5 applicable rescheduling guidelines and policies. Upon execution of this MOU, Reclamation shall have
1 8 6 adopted amendments to any applicable rescheduling guidelines and policies to provide for the
1 8 7 rescheduling of refuge water in accordance with this Article. After execution of this MOU and annually
1 8 8 thereafter, Reclamation shall provide the Service with a copy of the then-current rescheduling
1 8 9 guidelines and policies.

1 9 0 (f) Reclamation shall not interfere with the Service's right pursuant to Federal
1 9 1 Reclamation law and applicable California law to the beneficial use of water furnished pursuant to this
1 9 2 MOU so long as the Service fulfills all of its obligations under this MOU. A reduction in water supplies
1 9 3 pursuant to Article 9 of this MOU shall not be deemed to constitute such interference.

1 9 4 TIME FOR DELIVERY OF WATER

1 9 5 4. (a) On or about February 20 of each Calendar Year, Reclamation shall provide the
1 9 6 Service, in writing, with a preliminary forecast of whether the upcoming Year will be a Critically Dry
1 9 7 Year; and, if a Critically Dry Year is forecast, the extent to which Level 2 Water Supplies to be made
1 9 8 available to the Service during the upcoming Year are to be shorted pursuant to Article 9 of this MOU;
1 9 9 and the amount of Incremental Level 4 Water Supplies estimated to be made available to the Service
2 0 0 pursuant to this MOU for the upcoming Year. The forecast will be updated monthly, as necessary,
2 0 1 based on then-current hydrologic conditions. Upon the request of the Service, Reclamation shall make
2 0 2 available to the Service the data on which Reclamation relied to determine whether the Year in question

203 will or will not be a Critically Dry Year and to determine the amounts of Level 2 Water Supplies and
204 Incremental Level 4 Water Supplies to be made available to the Service pursuant to this MOU during a
205 Critically Dry Year.

206 (b) Based on the forecast(s) referred to in subdivision (a) of this Article, on or
207 before March 1 of each Calendar Year, the Service shall submit to Reclamation a written schedule,
208 satisfactory to Reclamation, showing both the monthly and annual quantities of Level 2 Water Supplies
209 and Incremental Level 4 Water Supplies to be delivered by Reclamation to each of the Refuges
210 pursuant to this MOU. Each schedule shall be updated on a monthly basis to reflect actual use and
211 remaining estimated needs.

212 (c) In accordance with subdivision (a) of Article 3 of this MOU, Reclamation shall
213 make available and/or convey Level 2 Water Supplies and Incremental Level 4 Water Supplies for
214 diversion by the Service at the Points of Delivery in accordance with the schedule submitted by the
215 Service pursuant to subdivision (b) of this Article, or any written revision(s) thereto, mutually agreed to
216 by Reclamation and the Service which are submitted to Reclamation within a reasonable time prior to
217 the date(s) on which the requested change(s) is/are to be implemented.

218 POINT OF DIVERSION, MEASUREMENT AND RESPONSIBILITY FOR DISTRIBUTION
219 OF WATER

220 5. (a) The original Point(s) of Delivery shall be established by written mutual
221 agreement of the Service and Reclamation. Such Point(s) of Delivery may be revised without amending
222 this MOU upon written mutual agreement of Reclamation and the Service.

223 (b) All water delivered to the Service pursuant to this MOU is to be measured at
224 the Point(s) of Delivery to reflect the quantities of Level 2 Water Supplies and Incremental Level 4

2 2 5 Water Supplies delivered to the Service's Boundary. Upon the request of the Service or on
2 2 6 Reclamation's own initiative, Reclamation shall investigate the accuracy of such measurements and the
2 2 7 parties will jointly take any necessary steps to adjust any errors appearing therein. For any period of
2 2 8 time when accurate measurement has not been made, Reclamation shall consult with the Service prior
2 2 9 to making a determination of the quantity of Delivered Water for that period of time. The Service shall
2 3 0 advise Reclamation on or before the 10th calendar day of each month of the quantities of Level 2
2 3 1 Water Supplies and Incremental Level 4 Water Supplies taken during the preceding month at the
2 3 2 Point(s) of Delivery.

2 3 3 (c) Reclamation shall not be responsible for the control, carriage, handling, use,
2 3 4 disposal, or distribution of water delivered to the Service pursuant to this MOU beyond the Point(s) of
2 3 5 Delivery specified in subdivision (a) of this Article.

2 3 6 POOLING OF WATER SUPPLIES

2 3 7 6. (a) Whenever the maximum quantities of Level 2 Water Supplies and/or the
2 3 8 Incremental Level 4 Water Supplies depicted in Exhibit "B" are reduced pursuant to Article 9 of this
2 3 9 MOU, the remaining Level 2 Water Supplies and/or the Incremental Level 4 Water Supplies may be
2 4 0 pooled for use on other Refuge(s); Provided, that no individual Refuge shall receive more Level 2
2 4 1 Water Supplies than would have been made available to it absent a reduction pursuant to Article 9 of
2 4 2 this MOU; or be reduced by more than twenty-five (25) percent; Provided further, that Reclamation
2 4 3 makes a written determination that pooling of water for use on other Refuge(s) would not have an
2 4 4 adverse impact, that cannot be reasonably mitigated, on Project operations, other Project Contractors,
2 4 5 or other Project purposes; Provided further, that Reclamation determines that such reallocation is
2 4 6 permitted under the terms and conditions of the applicable underlying water right permit and/or license;

2 4 7 and Provided still further, that water made available under this MOU may not be scheduled for
2 4 8 delivery outside the Service's Boundary without prior written approval of Reclamation.

2 4 9 (b) An Interagency Refuge Water Management Team, to be chaired by
2 5 0 Reclamation and to be established upon execution of this MOU, shall be entitled to collaboratively
2 5 1 allocate the pooled water supplies and provide a schedule for delivery of the pooled supplies to meet
2 5 2 the highest priority needs of the Refuge(s) as depicted in Exhibit "B"; Provided, however, nothing in this
2 5 3 Article is intended to require the Service to pool the water supply provided for in this MOU. The
2 5 4 Interagency Refuge Water Management Team shall be composed of designees of the Bureau of
2 5 5 Reclamation, the United States Fish and Wildlife Service, the California Department of Fish and Game,
2 5 6 and the Grassland Water District.

2 5 7 TRANSFERS, REALLOCATIONS OR EXCHANGES OF WATER

2 5 8 7. Subject to the prior written approval of Reclamation, the Project Water made available
2 5 9 under this MOU may be transferred, reallocated or exchanged in that Year to other Refuge(s) or
2 6 0 Project contractors if such transfer, reallocation or exchange is requested by the Service and is
2 6 1 authorized by applicable Federal and California State laws, and then-current applicable guidelines or
2 6 2 regulations.

2 6 3 TEMPORARY REDUCTIONS--RETURN FLOWS

2 6 4 8. (a) Consistent with the authorized purposes and priorities of the Project and the
2 6 5 requirements of Federal law, Reclamation shall make all reasonable efforts to optimize water deliveries
2 6 6 to the Service as provided in this MOU.

2 6 7 (b) The quantity of water to be delivered to the Service as herein provided may be
2 6 8 temporarily discontinued or reduced when investigation, inspection, maintenance, repair, or replacement

2 6 9 of any of the Project facilities and/or Non-Project Facilities or any part thereof necessary for the
2 7 0 delivery of water to the Service is required. Reclamation shall give and/or arrange to have the
2 7 1 owner/operator of Non-Project Facilities give the Service due written notice in advance of such
2 7 2 temporary discontinuance or reduction, except in case of an emergency, when no advance notice is
2 7 3 possible, in which case Reclamation shall notify and/or arrange to have the owner/operator of the Non-
2 7 4 Project Facilities notify the Service of said discontinuance or reduction as soon as is feasible; Provided,
2 7 5 that Reclamation shall use its best efforts to avoid any discontinuance or reduction in such service.
2 7 6 Upon resumption of service after such reduction or discontinuance, and if requested by the Service,
2 7 7 Reclamation will make all reasonable efforts, consistent with other obligations and operational
2 7 8 constraints, to deliver the quantity of water which would have been delivered hereunder in the absence
2 7 9 of such discontinuance or reduction.

2 8 0 (c) The United States reserves the right to all seepage and return flow water
2 8 1 derived from Delivered Water which escapes or is discharged beyond the Service's Boundary;
2 8 2 Provided, that this shall not be construed as claiming for the United States any right to seepage or return
2 8 3 flow being put to beneficial use pursuant to this MOU within the Service's Boundary by the Service or
2 8 4 those claiming by, through, or under the Service.

2 8 5 WATER SHORTAGE AND APPORTIONMENT

2 8 6 9. (a) In a Critically Dry Year, Reclamation may temporarily reduce, for that Year,
2 8 7 the availability of Level 2 Water Supplies up to twenty-five (25) percent of the maximum quantities set
2 8 8 forth in Exhibit "B" whenever reductions due to Hydrologic Circumstances are imposed upon
2 8 9 agricultural deliveries of Project Water; Provided, that such reductions shall not exceed in percentage
2 9 0 terms the reductions imposed on agricultural service contractors. The quantity of Non-Project Water

291 available to one or more of the Refuges as part of its/their Level 2 Water Supplies may be reduced by
292 more than twenty-five (25) percent in Years when the quantity of Project Water made available to the
293 Service can be reduced by no more than twenty-five (25) percent. In such cases, Reclamation shall
294 make up the supply difference with water supplies provided by Reclamation to ensure that Level 2
295 Water Supplies from all sources are not reduced by more than twenty-five (25) percent.

296 (b) Reductions in the Level 2 Water Supplies to be made available to the individual
297 Refuge(s) pursuant to this MOU, shall be imposed only in a Critically Dry Year. For the Incremental
298 Level 4 Water Supplies provided from Non-Project Water and Project Water, reductions shall be
299 imposed in accordance with the priority or priorities that were applied to such Non-Project Water and
300 the shortages assigned to Project Water prior to its transfer or acquisition as Incremental Level 4 Water
301 Supplies.

302 RULES AND REGULATIONS

303 10. The parties agree that the delivery of water pursuant to this MOU is subject to Federal
304 Reclamation law, as may be amended and supplemented, as applicable, and the rules and regulations
305 promulgated by the Secretary of the Interior under Federal Reclamation law.

306 QUALITY OF WATER

307 11. (a) Consistent with other legal obligations, the water delivered by Reclamation to
308 the Service pursuant to this MOU shall be of suitable quality to maintain and improve wetland habitat
309 areas and of comparable quality to water provided to other Project purposes within the same

geographical areas; Provided, that Reclamation is under no obligation to construct or furnish water treatment facilities to maintain or to improve the quality of the water furnished to the Service pursuant to this MOU. The quality of Delivered Water may be monitored by the Service at the Point(s) of Delivery on an as needed basis. Should Reclamation, in consultation with the Service, determine that the Level 2 Water Supplies and/or the Level 4 Water Supplies to be made available to the Service pursuant to this MOU during all or any part of a Year will not be of the quality that the Service feels is suitable to maintain and improve wetland habitat areas, the Service and Reclamation shall meet within 48 hours or at a time mutually agreeable to the parties and determine the appropriate actions necessary to identify and address the source of the water quality problems.

(b) The operation and maintenance of Project facilities shall be performed in such manner as is practicable to maintain the quality of raw water made available through such facilities at the highest level reasonably attainable as determined by Reclamation. The Service shall be responsible for compliance with all State of California and Federal water quality standards and directives applicable to surface return flows and subsurface agricultural drainage discharges generated within its boundaries arising from water conveyed to the Refuges pursuant to this MOU. This MOU does not create any obligation on Reclamation to provide drainage services.

USE OF NON-PROJECT FACILITIES FOR WATER DELIVERY

12. Any use of Non-Project Facilities, including use of State Water Project facilities pursuant to Joint Point of Diversion or other use of State Water Project facilities to deliver the water supplies provided for in the MOU, or any agreement for the use of such Non-Project Facilities, shall in no way alter the obligation of Reclamation to make available and deliver water supplies in accordance with all of the terms and conditions of this MOU. In addition, any costs incurred in the use of Non-

Project Facilities to deliver water supplies pursuant to this MOU shall be paid for in accordance with Section 3406(d)(3) of the CVPIA.

OPINIONS AND DETERMINATIONS

13. (a) Where the terms of this MOU provide for actions to be based upon the opinion or determination of either party to this MOU, said terms shall not be construed as permitting such action to be predicated upon opinions or determinations that are arbitrary, capricious or unreasonable. Both parties, notwithstanding any other provisions of this MOU, expressly reserve the right to seek relief from and appropriate adjustment for any such arbitrary, capricious, or unreasonable opinion or determination. Each opinion or determination by either party shall be provided in a timely manner. Nothing in this subdivision of this Article is intended to or shall affect or alter the standard of judicial review applicable under federal law to any opinion or determination implementing a specific provision of federal law embodied in statute or regulation.

(b) Both parties to this MOU shall have the right to make determinations necessary to administer this MOU that are consistent with the provisions of this MOU, the laws of the United States and of California, and the rules and regulations promulgated by the Secretary of the Interior. Each party shall make such determinations in consultation with the other party to the extent reasonably practicable.

WATER CONSERVATION

14. (a) The Service shall prepare individual refuge wetland habitat water management plan(s) in order to ensure the effective use of water supplies to meet wetland resource needs and to meet the objectives of the Central Valley Habitat Joint Venture and the purposes of the CVPIA to maintain and improve certain Central Valley wetland habitat areas. Criteria to prepare and evaluate

3 5 4 refuge wetland habitat water management plan(s) shall be developed by the Interagency Refuge Water
3 5 5 Management Team within one (1) year of the execution of this MOU, and reviewed and updated every
3 5 6 five (5) years thereafter taking into consideration the provisions of the Interagency Coordinated
3 5 7 Program Task Force report dated June 1998. The criteria shall include economically feasible water
3 5 8 management measures which can improve the Services' efficient use of water in a manner appropriate
3 5 9 for wetland and wildlife management, and shall also include time schedules for meeting the water use
3 6 0 efficiency and conservation objectives. The criteria shall grant substantial deference to on-going state
3 6 1 efforts related to wetlands water management and shall take into account the unique requirements
3 6 2 associated with water use for the maintenance and enhancement of wetland and wildlife habitat. The
3 6 3 Service shall make all reasonable efforts to complete the original wetland habitat water management
3 6 4 plan(s) within one (1) year of the establishment of the criteria. Reclamation will review and determine if
3 6 5 the wetland habitat water management plan(s) meet the established criteria for evaluating said plan
3 6 6 within ninety (90) days of receipt of each plan.

3 6 7 (b) Prior to the Service being afforded opportunities such as pooling
3 6 8 and rescheduling of water supplies pursuant to Articles 3 and 6 of this MOU, the Service must be
3 6 9 implementing a wetland habitat water management plan that has been determined by Reclamation to
3 7 0 meet the established criteria developed pursuant to subdivision (a) of this Article for preparing and
3 7 1 evaluating said plan. Continued pooling and rescheduling benefits pursuant to Articles 3 and 6 of this
3 7 2 MOU shall be contingent upon the Service's continued implementation of such wetland habitat water
3 7 3 management plans. In the event Reclamation determines the Service is unable to implement its wetland
3 7 4 habitat water management plan, due to circumstances beyond its control, the benefits of Articles 3 and
3 7 5 6 of this MOU shall be continued so long as the Service diligently works with Reclamation to obtain

such determination at the earliest practicable date, and thereafter the Service begins implementing its wetland habitat water management plan immediately after the circumstances preventing implementation have ceased.

(c) In the event that implementation of the wetland habitat water management plan(s) prepared pursuant to subdivision (a) of this Article results in water savings, all conserved water supplies may be transferred/reallocated, under the terms and conditions of this MOU, to other wetland, wildlife and fishery needs or to other Project contractors in accordance with the recommendations of the Interagency Refuge Water Management Team established pursuant to Article 6 of this MOU; Provided, that Reclamation makes a written determination that such transfer/reallocation of conserved water would not have an adverse impact, that cannot be reasonably mitigated, on Project operations, other Project Contractors or other Project purposes; Provided further, that the transfer/reallocation is requested by the Service and Reclamation determines that the transfer/reallocation is authorized by applicable laws, and then-current applicable guidelines and/or regulations.

(d) The Service shall submit to Reclamation an annual update on the status of its implementation of the wetland habitat water management plan(s) for the previous Water Year.

(e) At five (5) year intervals, the Service shall revise its wetland habitat water management plan(s), as necessary, to reflect the then-current criteria for preparing and evaluating said plans and submit such revised plan(s). Upon completion of such revised plan(s), the Service shall submit such revised plan(s) to Reclamation for review and so Reclamation can determine whether such plan(s) meet the then-current criteria.

EXISTING OR ACQUIRED WATER OR WATER RIGHTS

15. Except as provided in subdivision (b) of Article 3, the exercise of existing water rights

398 by the Service, or its acquisition of additional water or water rights from other than the United States,
399 shall not alter the obligation of Reclamation to provide the maximum quantities of Level 2 Water
400 Supplies and Incremental Level 4 Water Supplies under subdivision (a) of Article 3 of this MOU.

4 O 1 IN WITNESS WHEREOF, the parties hereto have executed this MOU as of the day and year

4 O 2 first above written.

403 By: /s/ Lester Snow
404 APPROVED AS LEGAL Regional Director, Mid-Pacific Region
405 FORM AND SUFFICIENCY Bureau of Reclamation

4 0 6 /s/ James E. Turner
4 0 7 OFFICE OF REGIONAL SOLICITOR
4 0 8 DEPARTMENT OF THE INTERIOR
4 0 9 By: /s/ Michael J. Spear
4 1 0 Manager, California, Nevada Operations Office
4 1 1 U.S. Fish and Wildlife Service